

VertiSep™ Packings Specification

| Silica-Based Packings | | | | | | | | | | |
|---------------------------|----------------|----------------|--------------------|-----------------|---------------|--------------------|----------------------------------|---------------|------------|------------|
| Packings | Base Material | Particle Shape | Particle Size (µm) | Carbon Load (%) | Pore Size (Å) | Pore Volume (mL/g) | Surface Area (m ² /g) | Phase Bonding | End Capped | USP L-Code |
| VertiSep™ Integral | | | | | | | | | | |
| C18 | Core-Shell | Spherical | 2.6 | 13 | 100 | - | 130 | Monomeric | Yes | L1 |
| C8 | Core-Shell | Spherical | 2.6 | 7 | 100 | - | 130 | Monomeric | Yes | L7 |
| PFP | Core-Shell | Spherical | 2.6 | - | 100 | - | 130 | - | No | L43 |
| VertiSep™ pHendure | | | | | | | | | | |
| C18 | Hybrid | Spherical | 2.5, 5 | 14 | 100 | - | 350 | Monomeric | Yes | L1 |
| Phenyl-Hexyl | Hybrid | Spherical | 2.5, 5 | 12 | 100 | - | 350 | Monomeric | Yes | L11 |
| VertiSep™ UPS | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5,10 | 17 | 100 | 1.1 | 450 | Monomeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 9 | 100 | 1.1 | 450 | Monomeric | Yes | L7 |
| Ph | Totally Porous | Spherical | 3,5,10 | 9.5 | 100 | 1.1 | 450 | Monomeric | Yes | L11 |
| CN | Totally Porous | Spherical | 3,5,10 | 4 | 100 | 1.1 | 450 | Monomeric | No | L10 |
| Si | Totally Porous | Spherical | 3,5,10 | - | 100 | 1.1 | 450 | - | No | L3 |
| HILIC | Totally Porous | Spherical | 3,5,10 | - | 100 | 1.1 | 450 | - | No | L3 |
| PFP | Totally Porous | Spherical | 3,5,10 | - | 100 | 1.1 | 450 | - | No | L43 |
| VertiSep™ AQS | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5,10 | 15 | 120 | 1.0 | 300 | Monomeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 8 | 120 | 1.0 | 300 | Monomeric | Yes | L7 |
| Ph | Totally Porous | Spherical | 3,5,10 | 7 | 120 | 1.0 | 300 | Monomeric | Yes | L11 |
| CN | Totally Porous | Spherical | 3,5,10 | 4 | 120 | 1.0 | 300 | Monomeric | No | L10 |
| NH2 | Totally Porous | Spherical | 3,5,10 | 3 | 120 | 1.0 | 300 | Monomeric | No | L8 |
| Si | Totally Porous | Spherical | 3,5,10 | - | 120 | 1.0 | 300 | - | No | L3 |
| Diol | Totally Porous | Spherical | 3,5,10 | - | 120 | 1.0 | 300 | Monomeric | No | L20 |
| VertiSep™ HCS | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5,10 | 23 | 100 | 1.0 | 350 | Polymeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 13 | 100 | 1.0 | 350 | Polymeric | Yes | L7 |
| Ph | Totally Porous | Spherical | 3,5,10 | 8 | 100 | 1.0 | 350 | Polymeric | Yes | L11 |
| C4 | Totally Porous | Spherical | 3,5,10 | 6 | 100 | 1.0 | 350 | Polymeric | Yes | L26 |
| CN | Totally Porous | Spherical | 3,5,10 | 4 | 100 | 1.0 | 350 | Polymeric | Yes | L10 |
| VertiSep™ BDS | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5 | 11 | 140 | 0.6 | 150 | Monomeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5 | 6 | 140 | 0.6 | 150 | Monomeric | Yes | L7 |
| Ph | Totally Porous | Spherical | 3,5 | 5 | 140 | 0.6 | 150 | Monomeric | Yes | L11 |
| CN | Totally Porous | Spherical | 3,5 | 4 | 140 | 0.6 | 150 | Monomeric | Yes | L10 |
| VertiSep™ EPS | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5,10 | 11 | 100 | 1.1 | 450 | Monomeric | No | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 6 | 100 | 1.1 | 450 | Monomeric | No | L7 |
| Ph | Totally Porous | Spherical | 3,5,10 | 5 | 100 | 1.1 | 450 | Monomeric | No | L11 |
| CN | Totally Porous | Spherical | 3,5,10 | 4 | 100 | 1.1 | 450 | Monomeric | No | L10 |
| Si | Totally Porous | Spherical | 3,5,10 | - | 100 | 1.1 | 450 | - | No | L3 |
| VertiSep™ BIO | | | | | | | | | | |
| C30 | Totally Porous | Spherical | 3,5,10 | 20 | 200 | 1.1 | 200 | Monomeric | Yes | L62 |
| C18 | Totally Porous | Spherical | 3,5,10 | 8 | 300 | 0.9 | 100 | Monomeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 6 | 300 | 0.9 | 100 | Monomeric | Yes | L7 |
| C4 | Totally Porous | Spherical | 3,5,10 | 4 | 300 | 0.9 | 100 | Monomeric | Yes | L26 |
| VertiSep™ GES | | | | | | | | | | |
| C18 | Totally Porous | Spherical | 3,5,10 | 17 | 120 | 1.0 | 300 | Polymeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 13 | 120 | 1.0 | 300 | Polymeric | Yes | L7 |
| Ph | Totally Porous | Spherical | 3,5,10 | 8 | 120 | 1.0 | 300 | Polymeric | Yes | L11 |
| C4 | Totally Porous | Spherical | 3,5,10 | 6 | 120 | 1.0 | 300 | Polymeric | Yes | L26 |
| CN | Totally Porous | Spherical | 3,5,10 | 3.5 | 120 | 1.0 | 300 | Polymeric | Yes | L10 |
| NH2 | Totally Porous | Spherical | 3,5,10 | 3 | 120 | 1.0 | 300 | Polymeric | No | L8 |
| Si | Totally Porous | Spherical | 3,5,10 | - | 120 | 1.0 | 300 | - | No | L3 |
| SAX | Totally Porous | Spherical | 3,5,10 | 4 | 120 | 1.0 | 300 | Polymeric | No | L14 |
| SCX | Totally Porous | Spherical | 3,5,10 | 4 | 120 | 1.0 | 300 | Polymeric | No | L19 |

Introduction

VertiSep™ Packings Specification

| Silica-Based Packings | | | | | | | | | | |
|-----------------------|----------------|----------------|--------------------|-----------------|---------------|--------------------|----------------------------------|---------------|------------|------------|
| Packings | Base Material | Particle Shape | Particle Size (µm) | Carbon Load (%) | Pore Size (Å) | Pore Volume (mL/g) | Surface Area (m ² /g) | Phase Bonding | End Capped | USP L-Code |
| VertiSep™ IRS | | | | | | | | | | |
| C18 | Totally Porous | Irregular | 10 | 10 | 125 | 1.0 | 300 | Monomeric | Yes | L1 |
| Ph | Totally Porous | Irregular | 10 | 8 | 125 | 1.0 | 300 | Monomeric | Yes | L11 |
| CN | Totally Porous | Irregular | 10 | 6 | 125 | 1.0 | 300 | Monomeric | Yes | L10 |
| NH2 | Totally Porous | Irregular | 10 | 4 | 125 | 1.0 | 300 | Monomeric | No | L8 |
| Si | Totally Porous | Irregular | 10 | - | 125 | 1.0 | 300 | - | No | L3 |
| VertiSep™ MMS | | | | | | | | | | |
| CN/NH2 | Totally Porous | Spherical | 5 | 16 | 60 | 1.0 | 450 | Monomeric | No | L18 |
| C8/NH2 | Totally Porous | Spherical | 5 | 11 | 60 | 1.0 | 450 | Monomeric | No | L28 |
| C8/C18 | Totally Porous | Spherical | 5 | 14 | 60 | 1.0 | 450 | Monomeric | Yes | L42 |
| C8/SCX | Totally Porous | Spherical | 5 | 9 | 60 | 1.0 | 450 | Monomeric | No | L44 |
| S8/SAX | Totally Porous | Spherical | 5 | 9 | 60 | 1.0 | 450 | Monomeric | No | - |
| Ph/C6 | Totally Porous | Spherical | 5 | 9 | 60 | 1.0 | 450 | Monomeric | Yes | L11 |
| VertiSep™ SPS | | | | | | | | | | |
| ODS1 | Totally Porous | Spherical | 3,5,10 | 6 | 80 | 0.5 | 220 | Monomeric | Yes | L1 |
| ODS2 | Totally Porous | Spherical | 3,5,10 | 12 | 80 | 0.5 | 220 | Monomeric | Yes | L1 |
| C8 | Totally Porous | Spherical | 3,5,10 | 6 | 80 | 0.5 | 220 | Monomeric | Yes | L7 |
| C6 | Totally Porous | Spherical | 3,5,10 | 5 | 80 | 0.5 | 220 | Monomeric | Yes | L15 |
| Ph | Totally Porous | Spherical | 3,5,10 | 3 | 80 | 0.5 | 220 | Monomeric | Yes | L11 |
| C4 | Totally Porous | Spherical | 3,5,10 | 3 | 80 | 0.5 | 220 | Monomeric | Yes | L26 |
| CN | Totally Porous | Spherical | 3,5,10 | 3 | 80 | 0.5 | 220 | Monomeric | No | L10 |
| NH2 | Totally Porous | Spherical | 3,5,10 | 2 | 80 | 0.5 | 220 | Monomeric | No | L8 |
| Si | Totally Porous | Spherical | 3,5,10 | - | 80 | 0.5 | 220 | - | No | L3 |
| SAX | Totally Porous | Spherical | 5,10 | 4 | 80 | 0.5 | 220 | Monomeric | No | L14 |
| SCX | Totally Porous | Spherical | 5,10 | 4 | 80 | 0.5 | 220 | Monomeric | No | L9 |

| Polymer-Based Packings | | | | | | | |
|------------------------|---------------|------------|----------------|--------------------|-----------------|------------------|------------|
| Packings | Base Material | Ionic Form | Particle Shape | Particle Size (µm) | Carbon Load (%) | Cross Linked (%) | USP L-Code |
| VertiSep™ PRP | | | | | | | |
| PRP-L21 | Polymer | - | Spherical | 5,10 | - | - | L21 |
| PRP-AQ | Polymer | - | Spherical | 5 | - | - | - |
| PRP-C18 | Polymer | - | Spherical | 5 | 17 | - | - |
| PRP-C8 | Polymer | - | Spherical | 5 | 10 | - | - |
| PRP-NH2 | Polymer | - | Spherical | 5 | 6 | - | - |
| VertiSep™ SUGAR | | | | | | | |
| CMP | Polymer | Calcium | Spherical | 9 | - | 8 | L19 |
| SOP | Polymer | Silver | Spherical | 10,20 | - | 8 | - |
| LMP | Polymer | Lead | Spherical | 8 | - | 8 | L34 |
| HMP | Polymer | Hydrogen | Spherical | 8 | - | 8 | L17 |
| VertiSep™ OA | | | | | | | |
| OA | Polymer | Hydrogen | Spherical | 8 | - | 8 | L22 |
| VertiSep™ IC | | | | | | | |
| Anion AX1 | Polymer | - | Spherical | 5 | - | - | L23 |
| Anion AX2 | Polymer | - | Spherical | 5 | - | - | L31 |
| Anion AX300 | Polymer | - | Spherical | 5 | - | - | L31 |
| Cation CX1 | Polymer | - | Spherical | 5 | - | - | L53 |